

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: ARADB36110

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Thamnophis rufipunctatus*

COMMON NAME: Narrow-headed Gartersnake, Narrowhead Garter Snake

SYNONYMS: *Natrix rufipunctatus*, *Thamnophis angustirostris*

FAMILY: Serpentes: Colubridae

AUTHOR, PLACE OF PUBLICATION: Cope, 1875

TYPE LOCALITY: Originally noted as "Southern Arizona" but Webb and Axtell (1986) later corrected this to "the vicinity of Fort Apache, Arizona."

TYPE SPECIMEN: HOLOTYPE: 8600 (formerly 1097), southern Arizona, H. W. Henshaw, September 1874 (Cochran, 1961).

TAXONOMIC UNIQUENESS: A member of the family *Colubridae*, the genus *Thamnophis* ranges from southern Canada to Costa Rica in Central America, and from the Pacific to the Atlantic coasts (Stebbins, 1985). There are more than 21 species that make up the genus *Thamnophis*, and *rufipunctatus* has been subjected to controversial classification status in the past. Lowe (1955) proposed reassigning *rufipunctatus* (as *angustirostris*) to the genus *Natrix* (= *Nerodia*), water snakes, due to the use of only one apparent diagnostic character—the divided anal plate, found in only some specimens. Since then, substantial research has been done to support this reclassification (Degenhardt, et al., 1996), yet it remains in the genus *Thamnophis*. Most herpetologists believe that this snake acts as a bridge between the two genera (Shaw and Campbell, 1974), and it may someday be placed in a separate genus.

DESCRIPTION: A medium-sized snake, reaching an average length of 112 cm (44 in). Females grow larger than males. Ground color olive, brown or tan, with distinct blackish, dark brown, dull brick-red, or orange paired spots on back and sides of body, fading toward the tail. Brownish gray below, paling on throat. Venter brownish-gray, or cream colored, often with two rows of blackish wedges, fading posteriorly. Scales keeled, usually 21 rows at mid-body. Anal plate usually single, but may be divided. Eight upper labials with dark bars on labial scales. Young have a dull yellowish belly, and often a cream-colored throat.

Because of their drab coloring and high set eyes, this species more closely resembles *Nerodia* (water snakes) than *Thamnophis*. Also, the head is narrow and more elongated than other *Thamnophis*.

AIDS TO IDENTIFICATION: No well-developed stripes or pale crescent behind corner of mouth as in other species of gartersnakes. Eyes high on blunt-nosed, elongated head separates this species from other gartersnakes in Arizona (Rosen 1988).

ILLUSTRATIONS:

Color drawing (Stebbins 1985: Pl. 43)

Color drawing (Stebbins 2003: Pl. 48)

Color photo (Behler and King 1979: Pl. 548)

Color photo (Tom Brennan, www.reptilesfaz.com)

Color photo (Brian Hubbs, <http://myweb.cableone.net/azmilk/azs-narrow.htm>)

Color photo (<http://www.fws.gov/southwest/es/arizona/>)

Color photo (<http://www.wildlife.state.nm.us/conservation/documents/Herps.htm>)

TOTAL RANGE: In the U. S., range includes the mountains of central and eastern Arizona and west-central New Mexico in Mogollon Rim area; a disjunct population from those in Mexico. Range in Mexico includes Northern Sonora and Chihuahua, south in the Sierra Madre Occidental to central Durango.

RANGE WITHIN ARIZONA: Upland drainages from central and eastern Arizona from the White Mountains along the Mogollon Rim into Oak Creek Canyon at elevations from about 2,200-8,000 ft (Brennan, 2008). Counties include Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai. Healthiest populations found in Oak Creek Canyon, and the East Verde River.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Found in or beside well-lit portions of clear, rocky streams where permanent water exists. May require large streams and rivers (Rosen and Schwalbe, 1988), lined with shrub-sized saplings and sheltered with broadleaf deciduous trees (alder, cottonwood, sycamore) in pinyon-juniper, oak-pine, or ponderosa pine communities. The narrow-headed gartersnake forages under water, seeking cover under rocks and boulders in the streambed when disturbed (Stebbins 1985). This snake basks on rocks, boulders and vegetation along stream banks, seeking shelter in crevices and under rocks (Degenhardt, et al., 1996).

Diurnal and evening crepuscular, snake is inactive in cold temperatures and extreme heat. Almost strictly aquatic, they are rarely seen more than a meter from water. However, hibernation takes place well above the flood line, in rocky outcroppings, during late fall and winter (Brennan, 2008). Rosen and Schwalbe (1998) found one gravid female more than 15 meters from the stream in July, and it is believed that they spend much of the gestation period on higher ground for sufficient thermoregulation. Research findings based on radio-telemetry data in Oak Creek, Arizona indicated that the species hibernates from November to April, and that the snakes do not likely travel more than 0.8km (0.5 mi) from their hibernation sites (USGS, 2006).

REPRODUCTION: Viviparous/ovoviviparous (live-bearing). 8-18 young are born in late July-early August, and likely earlier in the lower elevations. Males mature at about 2.5 years, Females at 2 years (Rosen and Schwalbe, 1988).

FOOD HABITS: Narrow-headededs are only found in areas of high native fish concentration and primarily consume fish, including speckled dace, Gila mountain sucker, and red shiner (Rosen and Schwalbe, 1988), but specimens from Mexico have been known to eat ambystomatid salamander larvae (Stebbins, 1985).

HABITAT: In Arizona, pinyon-juniper and pine-oak woodland into ponderosa pine forest; in permanently flowing streams, sometimes sheltered by broadleaf deciduous trees. Important components of bank vegetation include shrub-sized and sapling Arizona alder (the most conspicuous species), velvet ash, willows and canyon grape. (Rosen and Schwalbe, 1988).

ELEVATION: 2,440 – 8,080 ft [744-2463 m], (non-published data from HDMS, AGFD 2002). Stebbins (2003) reports an elevation range from 2,300 – 7,972 ft (700-2430 m). Snakes have been found at elevations as low as 2,300 ft, but most occur between 4,000-6,000 ft (Rosen and Schwalbe, 1988).

PLANT COMMUNITY: Pinyon-juniper and oak-pine belts into forests of ponderosa pine.

POPULATION TRENDS: Many populations are declining. Believed to be extirpated from Flagstaff and Wall Lake, areas where it was formerly abundant. Snake is also becoming more difficult to find in historical strongholds like Oak Creek Arizona.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	LT (USDI, FWS 2014) with Proposed CH [None USDI, FWS 1996] [C2 USDI, FWS 1991, 1994] [C2 USDI, FWS 1985, 1989]
STATE STATUS:	1A (AGFD SWAP 2012) [WSC AGFD, WSCA in prep] [State Candidate AGFD, TNW 1988]
OTHER STATUS:	Not Bureau of Land Management Sensitive (USDI, BLM AZ 2010) [Bureau of Land Management Sensitive (USDI, BLM 2008)] Forest Service Sensitive (USDA, FS Region 3 1988, 1999, 2007, 2013)

MANAGEMENT FACTORS: Threats to this species include lowering the water table, habitat modification, grazing along streambeds and increased recreational use in riparian areas. Other threats consist of the introduction of predators, such as bullfrogs, crayfish and predatory fishes, as well as habitat fragmentation.

The Narrow-headed Gartersnake was listed as Threatened under the Endangered Species Act in July 2014. Critical habitat has been proposed, but not yet determined.

PROTECTIVE MEASURES TAKEN: This species is protected under Commission Order 43: Reptiles; it is illegal to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect it.

SUGGESTED PROJECTS: Research into the life history.

LAND MANAGEMENT/OWNERSHIP: BIA – Fort Apache and San Carlos Reservations; USFS – Apache-Sitgreaves, Coconino, Prescott, and Tonto National Forests; Red Rock State Park; AGFD Chevelon Canyon Ranches; Private.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

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